FSA Modernization Partner

United States Department of Education

Federal Student Aid

Technical Architecture Application Maintenance Services Report

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1 Introduction

1.1 Executive Summary

The *Technical Architecture Application Maintenance Report: April 2002 for FY 2002* summarizes the Integrated Technical Architecture (ITA) team's tasks related to resolving issues associated with the maintenance of FSA applications in production, for the specified month. The ITA provides a standardized, reusable infrastructure for enabling business capabilities within the FSA application community. The long-term vision of the ITA is to provide an integrated, enterprise-wide technical architecture that will enable FSA to reduce the number of custom-built applications that are difficult and costly to update and maintain.

2 FSA Applications Maintained by the ITA in Production

- FAFSA – the Free Application for Federal Student Aid on the web is an application used by college students and schools to submit financial applications via the Internet

- IFAP – Information for Financial Professionals web site is an electronic library for financial aid professionals containing publications, regulations, and guidance regarding the administration of Title IV Federal Student Aid Programs

- SFA Intranet – is an internal portal, for FSA employees, that provides general information about FSA, FSA Channels, and the Department of Education. The portal also houses information about FSA standards

- Schools Portal – is a homepage for Schools-specific information with links, headlines and calendar function frequented by the schools. The site is customizable and can store bookmarks

- eCampus Based – FSA initiated the Institution or Campus Based (CB) Modernization project. The intent of the project is to modernize the existing CB application architecture; migrating from the current platform (COBOL, IBM Mainframe, VSAM data store) to a relational database platform (Oracle), developing a web-based user interface (WebSphere), along with additional software functionality enhancements. This modernized solution is named eCB (electronic Campus Based). The main objective of the modernization effort is to offer institutions and CB staff an integrated and intuitive solution that increases access to information and self-service capabilities supporting FSA's strategic goals

- Financial Partners Data Mart – provides executive information and decision support capabilities around several key business functions for both the Guaranty Agencies (GAs) and the Lenders. The Data Mart initiative provides infrastructure within the channel and provides initial Risk Management, Customer Relationship Management, Compliance

Management, and Portfolio Management functionality related to the thirty-six Guaranty Agencies and the approximately four thousand lenders

- CFO Data Mart – provides reporting capabilities to the Chief Financial Office implementing MicroStrategy and Informatica

- Exit Counseling – utilizes WebSphere and MQ Series to access NSLDS mainframe for specific information

- Students.gov - an award-winning interagency portal sponsored by FSA that provides access to a wide range of public and private information and services targeted towards prospective and current post-secondary education students and their parents

3   ITA Products

- IBM HTTP Server – web server

- IBM WebSphere – Java application server

- Network Dispatcher – cluster load balance and failover

- Interwoven – content management application

- Informatica – mainframe data tool that converts mainframe data for Oracle so reports can be generated by MicroStrategy

- Autonomy – search engine

- Viador / JRun – Viador is the product or application for the Schools Portal and JRun is the application server

4   Issue Matrix

The following matrix details the issues encountered by the ITA team from April 1, 2002 to April 30, 2002. The matrix is organized chronologically by application name and date to illustrate the team's progress in resolving the majority of issues and the instances in which the team directed its efforts to seek resolution for an issue. Subsequently, the matrix consists of the following categories: name of the application connected to an issue, description of the issue, steps taken by the ITA team to resolve an issue, the issue's level of priority ranging from high to medium to low, the issue's status whether new, in progress, or closed, and the issue's resolution date. Some issues span a greater time period and closure may not have been possible before the deadline of this report.

5   Issue Resolution Log

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
April 1, 2002 – April 15, 2002	Autonomy	Search engine returning incorrect results according to application teams. Google search was compared to Autonomy search, producing different results, respectively. Autonomy search engine was also reported as returning inconsistent results.	The ITA team worked with the application team to determine requirements for searching and modifying Autonomy to provide adequate search results for each application. Autonomy upgrade combined with change of Interwoven template resolved this issue.	Medium	Closed	April 15, 2002
April 1, 2002 – April 15, 2002	Interwoven/ Autonomy	To accommodate some of the Autonomy enhancements that have been occurring, Interwoven templates must be updated to provide adequate data for Autonomy to index.	All datacapture templates were updated with Publication Date information to allow Autonomy to search against this type of field to provide better results to the user. Autonomy was upgraded on April 10.	Medium	Closed	April 15, 2002
April 11, 2002	Interwoven	Interwoven server couldn't push content to production servers.	Interwoven opendeploy agent was not listening properly on production server (E9 & E13). The service was restarted and the problem was resolved.	Medium	Closed	Apr 11, 2002
April 26, 2002	Interwoven	Directory structures for IFAP and Portals were viewable by all users. IFAP, intranet, and Portals team deployments are all located in the same screen and openly accessible.	Viewing permissions have been changed. The ITA team is working to resolve this issue.	Medium	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
April 1, 2002 – April 30, 2002	FAFSA	WebSphere is recreating the table in the session database when it restarts under a heavy load. This issue has been observed three times in the production environment.	Tested IBM's temporary fix to the Session Creation problem. This fix does not allow WAS to drop the table since it already exists. The fix also prints extra debug messages that explains why WAS drops the session table. This fix needs to be installed on all WAS servers. This fix has been scheduled for installation twice and has been delayed as many times.	Medium	Ongoing	N/A
April 1, 2002 – April 30, 2002	FAFSA	ITA team was tasked with transitioning FAFSA Operations tasks to the VDC team. These tasks involve WebSphere maintenance and configuration as well as Network Dispatcher.	Ongoing meetings with CSC have been established to transition all tasks involved with FAFSA operations to their team. This task was finalized March 15, 2002. The ITA continues to support the CSC operations team when needed. The ITA team continues to support CSC personnel in the FAFSA production environment.	Low	Ongoing	N/A
April 1, 2002 – April 30, 2002	FAFSA	Weekly FAFSA production calls have been scheduled to address issues.	The ITA team has continuously been represented at these meetings and ensures that issues are being resolved promptly.	Low	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
Apr 1, 2002 – Apr 30, 2002	FAFSA	Current FAFSA production contains excess number of servers to support the off-peak environment. A proposal was suggested to determine the number of servers needed and available for this environment.	The ITA team developed a proposal for an environment that would support FAFSA off-peak requirements. This configuration consisted of existing servers with a few excess servers. These extra servers are to be utilized for an HP performance test environment. The schedule has been agreed upon and change requests are pending to decommission servers in the production environment. The ITA team worked with CSC and IBM to remove one of the servers from the production environment. The duration of the initial removal exceeded one to hour to complete. These tasks will be scheduled throughout the end of April and into May.	Low	Ongoing	N/A
April 1, 2002 – April 30, 2002	FAFSA	Web server processes are failing to respond to requests from I.H.S and causing a single CPU to peak at 100% utilization. The application is not impacted, but the server performance is skewed.	This is an ongoing problem. IBM has recommended an upgrade to I.H.S, but this must be tested throughout each environment. As a temporary solution, the process that is hanging the CPU is 'killed' so that performance resumes normally. A schedule to upgrade the version of I.H.S will be presented. This upgrade must be executed and tested in each environment before it can be moved into production. The development and staging environments have been successfully upgraded. The remaining environments will be scheduled with the FAFSA application team.	Low	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
April 1, 2002	FAFSA	Operations have reported that the FAFSA WebSphere configuration takes some time to initialize if all Servers are rebooted together.	The WAS admin database was only setup for a maximum of 100 connections from the WAS cluster by the CSC admin. ITA has requested that this be increased to 500.	Medium	Ongoing	N/A
April 1, 2002 – April 20, 2002	Students.gov	The Students.gov application experienced performance problems in the production environment.	The application was using excessive SQL calls. The ITA team assisted in the troubleshooting of issues and provided recommendations to resolve these issues.	Medium	Closed	April 20, 2002
April 5, 2002	Students.gov	Documented and assisted CSC with the construction of the Students.gov production site. Helped troubleshoot issues with the application code and configuration.	The site has launched successfully.	Medium	Closed	April 15, 2002
April 17, 2002 – April 30, 2002	FP & Students Portal	Financial Partners & Students Portals applications have completed testing in order to meet a production date of April 30.	The ITA team provided scripts and support to build the Portals production environments. Several environment issues were encountered during the build that were resolved by the ITA team.	Medium	Closed	April 30, 2002
April 30, 2002	Students Portal	If the users use the Proxy server to log in the Students Portal site then the proxy server will cache their pages.	Students Portal code was modified to disable the proxy caching.	Medium	Closed	April 30, 2002

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
April 4, 2002 – April 20, 2002	Schools Portal	The Schools Portal business owner has requested a cleanup of the production database for the Schools Portal to eliminate all unneeded user ID's.	The Viador admin application was not functioning properly inside the VDC firewall. The ITA worked with Viador support to attempt to get the admin functionality to work correctly. Manual scripts were provided by Viador to delete user ID's from the database. This task was then transitioned to the application operations team.	Low	Closed	April 20, 2002
April 12, 2002	IFAP	IFAP JSP enhancements not yet on production server.	Pushed JSPs to Production through Interwoven.	High	Closed	April 12, 2002
April 24, 2002	IFAP	CSC installed a new monitoring tool on WAS which inadvertently removed parameters required for the IFAP search engine	The configuration information removed by CSC was re-added and WebSphere was restarted.	Medium	Closed	April 24, 2002
April 22, 2002	IFAP	Investigated an issue that occurred when a user did not obtain expected results while searching for an ECFR publication type.	Hosts file updated on E7 to include 4 URL's necessary for HTTPFetch to spider ECFR site correctly.	Medium	Closed	April 25, 2002
April 1, 2002	eCB	Production eCB currently has a persistent session issue where session data was not available to both nodes.	The ITA team discovered that the eCB session cookie is not named properly. Tested fix within the performance environment. Fix is now being scheduled as to when it will be propagate to production.	Medium	Ongoing	N/A
April 1, 2002	eCB	eCB release two testing has shown that several kernel and TCP parameters within Solaris needs to be reconfigured to increase scalability of the production site.	The ITA team identified the Solaris parameter changes and opened a change request for CSC to do it. CSC has completed the change request.	Medium	Closed	April 15, 2002

6   Search Engine Enhancements

The following is a table outlining enhancements to the Search capability for the IFAP application which were performed by the ITA team

Enhancements		
Enhancements completed as scheduled on April 10	Autonomy	The ITA team has been preparing for an Autonomy software component upgrade with further enhancements to enable Date Range and Keyword searching. Autonomy was upgraded on development & test environments. Also modified was the RCS Search and the Custom RCS Search Tag Library for proper Date Range and Keyword searching, making necessary configuration changes in the new Autonomy software components to match. The ITA also designed and wrote PERL scripts for Interwoven profiles data conversion and assisted in Interwoven template modifications. We also worked closely with the Operations team to merge their modifications for search help/instructions. A change request form has been submitted to CSC and confirmed for production upgrade, scheduled for April 10.